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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/775,492	02/05/2001	Michele Bargauan	34057/GM/1p	8462
7590	10/03/2005		EXAMINER	
MODIANO & ASSOCIATI Via Meravigli, 16 MILANO, 20123 ITALY			PATHAK, SUDHANSU C	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/775,492	BARGAUAN, MICHELE
	Examiner	Art Unit
	Sudhanshu C. Pathak	2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on July 26<sup>th</sup>, 2005.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-16 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on September 24<sup>th</sup>, 2004 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_

## DETAILED ACTION

1. Claims 1-to-16 are pending in the application.

### *Response to Arguments*

2. Applicant's arguments filed on July 26<sup>th</sup>, 2005 have been fully considered but they are not persuasive. In regards to the arguments presented in the amendment it is still not clear as to **How the components connected as described in the specification and Figures 2-3 results in the complex signal**. Furthermore, the examiner (of record) has consulted other examiners so as to provide guidance, and it is still not clear how the real signal is converted into the complex signal with inherent quadrature. It is recommended that the applicant provide further detail in the specification as to how one of ordinary skill in the art would get the result as is claimed i.e. converting a real signal into a complex signal. The drawings of the waveforms of the signals into and out of each component, as described in Figures 2 & 3) provided in the above mentioned amendment still do not provide enough insight as to how the complex signal is created.

3. In regards to the "Remarks" presented:

- It is assumed that the signal "Test signal" (Remarks, Page 2) corresponds to the "real signal" designed to be converted into the complex signal and the "added wave" (Remarks, Page 3) corresponds to the signal from the oscillator (Fig. 2, element 7). The specification & Claim 1 disclose adding to the real signal a signal whose frequency is four times the band center

frequency of the real signal. However, the Figures in the Remarks section (“Test Signal” & “added wave”) show the frequency of the test signal to be greater than the frequency of the added wave.

- The Remarks section on (Page 1-to-Page 3 & Figures “Q<sub>a</sub>”, “I<sub>a</sub>”) discloses the operation of the selector wherein the selector sends the signal alternatively for a period of 4 times the center frequency. However, the Specification on (Page 3, lines 20-25) discloses the selector to alternatively send the signal for a period equal to four times the band-center frequency of the signal to be converted on a branch I, while on the opposite branch Q there is a zero signal, and for a period on the branch Q (with the zero signal on the branch I) with a frequency equal to twice the band-center frequency of the signal to be converted. Therefore, the switch is on the I branch for a longer period of time than on the Q branch.
- Furthermore, it is not clear as to how multiplying the thresholded signal(s) with the signal from the oscillator (Fig. 2, element 16) result in obtaining quadrature between the components of the complex signal. In the Remarks section Pages 5-6 also do not disclose “I<sub>out</sub>” & “Q<sub>out</sub>” & “I<sub>filtered</sub>” & “Q<sub>filtered</sub>” to be in quadrature.
- In regards to the Remarks section Page 10, the Examiner has not received a phone call (by the end of August) so as to further discuss the matter. The applicant is encouraged to discuss the invention with the office in an interview to clarify the invention.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-to-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding to Claims 1-to-16, the specification does not disclose in a full, clear and exact terms as to **How the components connected as described in the specification and Figures 2-3 results in the complex signal** converted from the real signal. It is also not clear as to how the selector selecting the "I" branch for a period of four times the band-center frequency of the incoming signal and selecting the "Q" branch for a period of two times the band-center frequency of the incoming signal; it is not clear how this uneven selection of time between the "I" & "Q" branches results in a quadrature between the two branches. It is again not clear how the multipliers "14" & "15" function or if it works as a mixer it is again not clear how the mixer works with a square wave input and a sinusoid input being mixed; more details on the mixer (Fig. 2, elements 14 & 15) operation are required, furthermore it is again not clear how inverting (multiplying by "1" & "-1") the oscillator signal produces the "I" & "Q" signal.

In regards to Figure 3, a dc-offset (Fig. 3, element 23) is implemented so as to avoid removing the DC-component at the threshold circuits (Fig. 3, elements 14 & 15), however these components are still implemented in the embodiment as described in Figure 3.

6. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims are a single means claims i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. *In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983)* (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor. See MPEP 2164.08(b).
7. Claims 3-4 & 13-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to

reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim discloses the selection step is performed by selection means, which send signals to said threshold circuits with a frequency which is twice said band-center frequency of the signal to be converted. However, the Specification on (Page 3, lines 20-25) discloses the selector to alternatively send the signal for a period equal to four times the band-center frequency of the signal to be converted on a branch I, while on the opposite branch Q there is a zero signal, and for a period on the branch Q (with the zero signal on the branch I) with a frequency equal to twice the band-center frequency of the signal to be converted. Therefore, the switch is on the I branch for a longer period of time than on the Q branch.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1 & 10 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims disclose adding a real signal to a signal whose frequency is four times the band-center frequency of said signal to be converted. It is not clear as to what "said signal" refers to, this should actually be "... said real signal..." .

***Conclusion***

**10. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

**11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (571)-272-3038. The examiner can normally be reached on M-F: 9am-6pm.**

- If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571)-272-3056
- The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2634

- Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sudhanshu C. Pathak  
September 29<sup>th</sup>, 2005.



**SHUWANG LIU**  
**PRIMARY EXAMINER**